

REMARKS

Claims 1-5 are objected to under 37 CFR 1.75(c) as being improper form. In order to overcome this objection, the claims have been amended to delete all improper dependencies.

Claims 1, 7 and 8 have been rejected under 35 USC 112, second paragraph, because it is not clear as to whether means (10) for optically transmitting an information-carrying signal is an element of the invention. In order to overcome this rejection, the claims have been amended to make it clear that means (10) is not intended to be an element of the invention but instead is contained in the preamble of the claims to indicate that the device (14) of the invention is intended to be used with means (10) for optically transmitting an information-carrying signal is an element of the invention.

A new claim 11 is presented. The characteristics of new claim 11 are supported by the application as filed in claims 1, 7 and 8 and in the description, in page 8, line 27 to page 10, line 1.

Claims 1-5 and 9 are rejected under 35 USC 102(b) as anticipated by Liang. Reconsideration and withdrawal of this rejection is respectfully requested.

Liang (US 6 493 133) discloses in Figure 3 an optical signal processor device, connected to optical fibers (101a) for optically transmitting an information-carrying signal.

The device comprises:

- filters F1 (F2) configured to eliminate Rayleigh backscattering signal (column 9, lines 66-67) and pass a signal 7.1 (signal 7.2) which is an information-carrying signal (C-and L-hands);

- an amplifier 306 (307) which is disposed between two circulators 301a and 301b in the optical fiber medium 302 (303) which amplified the information-carrying signal ("band amplifier 306 amplifies the signals", column 9, line 67 to column 10, lines 1-2 ; "the filtered signals are then amplified in hand amplifier 307").

Claim 1 recites "discrimination means for discriminating between a pump signal intended to be back-propagated in the optical transmission means and a Rayleigh backscattering signal, said (discrimination means being connected to the optical propagation medium to suppress the Rayleigh backscattering signal by filtering that passes the pump signal only".

Liang does not disclose means for discriminating between a pump signal intended to be back-propagated in the optical transmission means and a Rayleigh backscattering signal.

Liang discloses that the filter F1 (F2) is intended to discriminate only between an amplified information-carrying signal (which is amplified by an amplifier 306 (307)) and the Rayleigh backscattering signal to pass only the information-carrying signal. Indeed, Liang teaches only that the filters are intended to pass the information carrying signal (column 9, lines 52-53, "filters F1 is a C-band pass filter and filter F2 is an L-band pass filter") and to eliminate BRS and other noise.

Thus, Liang discloses an optical signal processor device comprising discrimination means for discriminating between an information-carrying signal and a Rayleigh backscattering signal, these means being connected to the optical propagation medium 302 (303) to suppress the Rayleigh backscattering signal by filtering that passes

the amplified filtering information-carrying signal only ("band amplifier 306 amplifies the signals", column 9, line 67 to column 10, lines 1-2 ; "the filtered signals are then amplified in band amplifier 307").

Therefore, the device defined in Claim 1 differs from the device disclosed in Liang in that in Claim 1:

- the discrimination means (22) are means for discriminating between a pump signal (P) intended to be Back-propagated in the optical transmission means (10) and a Rayleigh backscattering signal, said discrimination means (22) being connected to the optical propagation medium (16) to suppress the Rayleigh backscattering signal by filtering that passes the pump signal (P) only.

Claims 6-8 and 10 are rejected under 35 USC § 103(a) as unpatentable over Liang in view of Inoue et al. Reconsideration and withdrawal of this rejection is respectfully requested..

The teaching of Liang and of Inoue et al. (US 6 867 907), whether considered individually or in combination, would not have suggested applicant's claimed invention to one skilled in the art or rendered obvious the subject matter of independent claim 1.

Liang does not teach discrimination means for discriminating between a pump signal (P) intended to be back-propagated in the optical transmission means (10) and a Rayleigh backscattering signal.

Therefore, the device defined in Claim 1 differs from the device disclosed in Liang in that in Claim 1:

- the discrimination means (22) are means for discriminating between a

pump signal (P) intended to be back-propagated in the optical transmission means (10) and a Rayleigh backscattering signal, said discrimination means (22) being connected to the optical propagation medium (16) to suppress the Rayleigh backscattering signal by filtering that passes the pinup signal (P) only.

The problem solved by this difference is to enable the suppression of the Rayleigh backscattering noise while passing the back-propagating pump signal, without using amplifiers intended to amplify the signal on the upstream side of the isolator or the filter (see application, page 2, lines 7 to 14).

Thus, the invention addresses the problem of providing a device that permits these operations to be performed at lower cost (page 10, lines 2 to 5).

The applicant proposes to solve this problem with a device as defined in claim I.

Neither Liang, nor Inoue addresses these problems. Liang addresses the problem of the Raman effects in long-haul systems (see Liang, column 2, lines 11-34). Besides, Inoue et al. only addresses the problem of the amplification Raman by using a pumping light source unit for Raman amplification.

Consequently, it would not have been obvious to one skilled in the art to propose a device which comprises discriminating means as defined in Claim 1.

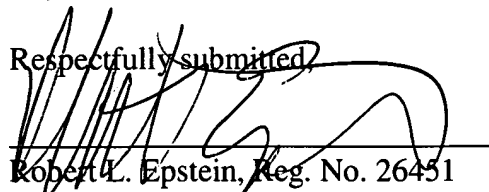
Therefore, claim 1 was not obvious of the art cited and this rejection should be withdrawn.

In summary, Claim 1, as amended, is believed to be patentable under 35 USC § 112, 35 USC § 102(b) and 35 USC § 103. Therefore, dependent claims 2-10 must a fortiori be allowable, since they require all the limitations of independent claim 1 from

which they depend. Claim 11 is believed to be patentable for the same reasons.

Further, applicant respectfully notes that, due to their dates and the priority date of the present application, the following documents do not properly belong to the prior art: Tanigawa et al. (US 7 212 281), Evans et al. (US 2005/0174563), Torii et al. (US 7 242 519), Yam (US 7 038 840) et Meli et al. (US 7 035 545).

Respectfully submitted,



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